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17 UNITED STATES DISTRICT COURT
18 SOUTHERN DISTRICT OF CALIFORNIA

19 e.Digital Corporation,
20 Plaintiff,
21 v.
22 Verbatim Americas LLC,
23 Defendant.

Case No. 3:13-cv-02943-H-BGS

**DEFENDANT VERBATIM
AMERICAS LLC'S OPENING
CLAIM CONSTRUCTION BRIEF**

Date: January 9, 2015
Time: 9:00 a.m.
Courtroom: 15A (Annex)
Judge: Hon. Marilyn L. Huff

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Introduction

The patent-in-suit, U.S. Patent No. 5,839,108 (“’108 patent”), claims a specific memory management method for data stored in non-volatile memory, such as flash memory. According to the patent, this method allows flash memory to act as the primary memory in a computer system. As the patent readily admits, flash memory management techniques were well known prior to the filing of the ’108 patent. For example, the patent makes reference to “prior art methods of file management, designed specifically for use with flash memory such as the system taught in U.S. Pat. No. 5,404,485 issued to Ban.” To obtain allowance of the ’108 patent, the patentees distinguished their specific method of flash memory management from various prior-art methods. In fact, the patentees made clear throughout the intrinsic record that the ’108 patent does not broadly cover all methods of flash memory management, but is directed to the use of “linked lists” to manage memory rather than File Allocation Tables (“FATs”). FATs are also referred to as “memory maps.”

Verbatim’s constructions are grounded in the intrinsic evidence and reflect the inventors’ actual alleged contribution. In contrast, e.Digital’s constructions ignore the words of the claims, the express disclosures in the specifications, and the patent’s prosecution history and, instead, rely on extrinsic evidence in an effort to re-characterize the claimed inventions. Verbatim’s constructions, which stay true to the intrinsic record, should be adopted.

Central to the parties’ claim construction dispute is whether the patent covers memory management using prior-art structures called FATs or memory maps. The intrinsic record makes clear that the patentees disparaged this technique, described the technique as prior art, and distinguished their claims over references that utilize it. Accordingly, consistent with the intrinsic record, Verbatim’s constructions clarify that the claims do *not* cover FATs or memory maps. *See Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1349 (Fed. Cir. 2004) (“We cannot construe

1 the claims to cover subject matter broader than that which the patentee itself
2 regarded as comprising its inventions and represented to the PTO.”). In contrast,
3 e.Digital improperly seeks to have the patent cover the very memory management
4 technique of using FATs that the patentees distinguished and disclaimed in the
5 specification and during prosecution. e.Digital’s cannot twist its patent, “like a
6 nose of wax”—one way during prosecution to obtain allowance and another way
7 during litigation to assert infringement. *Amazon.com, Inc. v. Barnesandnoble.com,*
8 *Inc.*, 239 F.3d 1343, 1351 (Fed. Cir. 2001). Indeed, it is a bedrock principle of
9 patent law that a patent’s claims cannot be construed to cover the prior art. *See*
10 *Harris Corp. v. IXYS Corp.*, 114 F.3d 1149, 1153 (Fed. Cir. 1997) (noting claims
11 should be construed to avoid ensnaring prior art, and finding plaintiff’s proposed
12 construction, which captured prior art, was “much less plausible” than defendant’s);
13 *Amhil Enters. Ltd. v. Wawa, Inc.*, 81 F.3d 1554, 1562 (Fed. Cir. 1996) (claims
14 should be construed to avoid prior art to preserve validity).

15 The remaining disputes present similar issues. Whereas Verbatim’s
16 constructions are grounded in the intrinsic record, e.Digital relies on less persuasive
17 extrinsic evidence and ignores specific statements made by the patentees. For
18 example, e.Digital’s proposed construction for “data storage format,” as “file
19 system,” replaces one claim term for another based solely on dictionary definitions.
20 As another example, e.Digital’s construction of “primary memory” would broadly
21 capture any memory accessible by a computer processor, including “cache
22 memory,” a separate claim term. In each case, e.Digital improperly attempts to
23 stretch the claim language to cover more than what was “actually invented.”
24 *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir.
25 1998). e.Digital’s proposed constructions, therefore, should be rejected.

26 Applicable Law

27 Claim construction is a matter of law. *Markman v. Westview Instruments,*
28 *Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370 (1996). A claim term

1 must be given the “ordinary and customary” meaning it would have had to a person
2 of ordinary skill in the art at the time of the invention. *See Phillips v. AWH Corp.*,
3 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

4 For some terms, the ordinary meaning may be readily apparent, such that
5 construction “involves little more than the application of the widely accepted
6 meaning of commonly understood words.” *Id.* at 1314. In other circumstances,
7 “[b]ecause the meaning of a claim term as understood by persons of skill in the art
8 is often not immediately apparent, and because patentees frequently use terms
9 idiosyncratically, the court looks to ‘those sources available to the public that show
10 what a person of skill in the art would have understood disputed claim language to
11 mean.’” *Id.* Such sources may include both intrinsic evidence (i.e., the claims,
12 specification, and prosecution history) and extrinsic evidence. *See id.*; *Vitronics*
13 *Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582-83 (Fed. Cir. 1996). However,
14 “intrinsic evidence is the most significant source of the legally operative meaning
15 of disputed claim language.” *Vitronics*, 90 F.3d at 1582.

16 The claims do not stand alone, but must be read in view of the specification,
17 of which they are a part. *Phillips*, 415 F.3d at 1315. “The construction that stays
18 true to the claim language and most naturally aligns with the patent’s description of
19 the invention will be, in the end, the correct construction.” *Id.* at 1316. In some
20 cases, the intrinsic evidence may reveal that the patentees acted as their own
21 lexicographer and defined a claim term, in which case that definition governs. *See*
22 *id.* Likewise, the patentee’s use of the designation “this invention” or “the present
23 invention” may guide how the claims are construed. *Honeywell Int’l v. ITT Indus.*,
24 452 F.3d 1312, 1318 (Fed. Cir. 2006).

25 The intrinsic evidence also may reveal a disclaimer or disavowal of scope,
26 which is dispositive. *See Phillips*, 415 F.3d at 1316; *SciMed Life Sys., Inc. v.*
27 *Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001) (“Where
28 the specification makes clear that the invention does not include a particular feature,

1 that feature is deemed to be outside the reach of the claims of the patent, even
2 though the language of the claims, read without reference to the specification,
3 might be considered broad enough to encompass the feature in question.”).

4 Disclaimers in the specification are especially apparent when the patentees
5 make repeated derogatory statements about a particular feature. *See Chicago Bd.*
6 *Options Exch., Inc. v. Int’l Sec. Exch., LLC*, 677 F.3d 1361, 1372 (Fed. Cir. 2012)
7 (“[T]he specification goes well beyond expressing the patentee’s preference . . . and
8 its repeated derogatory statements about [a particular embodiment] reasonably may
9 be viewed as a disavowal. . . .”).

10 Arguments made during prosecution or reexamination to distinguish the
11 invention from the prior art also serve as disclaimers. *See Spectrum Int’l v. Sterilite*
12 *Corp.*, 164 F.3d 1372, 1378-79 (Fed. Cir. 1998) (“By distinguishing the claimed
13 invention over the prior art, an applicant is indicating what the claims do not
14 cover.”); *Alpex Computer Corp. v. Nintendo Co.*, 102 F.3d 1214, 1220-21 (Fed. Cir.
15 1997) (same); *O.I. Corp. v. Tekmar Co.*, 115 F.3d 1576, 1581 (Fed. Cir. 1997)
16 (holding claimed “passages” were non-smooth where “the description expressly
17 distinguishes over [smooth] prior art ‘passages’”). A claim cannot be “correctly
18 construed to cover what was expressly disclaimed.” *Cultor Corp. v. A.E. Staley*
19 *Mfg. Co.*, 224 F.3d 1328, 1331 (Fed. Cir. 2000).

20 Extrinsic evidence also may be considered, but although it “can shed useful
21 light on the relevant art . . . it is less significant than the intrinsic record in
22 determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at
23 1317. Dictionaries and technical treatises contemporaneous with the patent being
24 construed may provide accepted meanings of terms. *See Phillips*, 415 F.3d at 1318;
25 *Vitronics*, 90 F.3d at 1584 n.6; *Brookhill-Wilk 1 v. Intuitive Surgical, Inc.*, 334 F.3d
26 1294, 1299 (Fed. Cir. 2003) (admonishing district court for relying on non-
27 contemporaneous references, and striking those references from consideration on
28 appeal).

Argument

I. Level of Ordinary Skill in the Art

The minimum qualifications for one of ordinary skill in the art of the '108 patent is someone who has a bachelor's degree or equivalent academic or professional training in computer engineering, electrical engineering, computer science or a closely related field, plus two to three years of work experience in design or development of memory devices and/or systems.

II. The '108 Patent's Disclosure

A. The '108 patent provides no description of claim 1's subject matter; the only support for claim 1 is in the '445 patent's disclosure.

Claim 1 of the '108 patent is an independent method claim relating to memory management for a file system with three main steps: (1) creating a primary memory, (2) coupling the primary memory to a cache memory, and (3) writing a new data segment from the cache memory to the primary memory by linking the new data segment to a sequentially previous logical data segment.

The steps of claim 1 are nowhere described in the '108 patent's disclosure. (*See* Ex. 1, '108 patent.)¹ Instead, the only discussion of these steps appears in the '108 patent's parent: the '445 patent. (*See* Ex. 2, '445 patent at col. 4:19-39 (describing creating, coupling, and writing steps); *id.* Fig. 3A & col. 8:1-9 (describing arrangement of underlying hardware, including cache memory and primary memory); *id.* Fig. 7A & col. 16:8-17:61 (describing linkage of data segments using "logical links" in place of traditional tables or maps).)

B. The '108 patent does not properly incorporate by reference the '445 patent's disclosure.

A patent must identify with "detailed particularity what specific material it incorporates and clearly indicate where the material is found in the various

¹ "Exs. 1-12" refer to exhibits appended to the concurrently filed Declaration of Chad S.C. Stover.

documents.” *Zenon Envtl., Inc. v. U.S. Filter Corp.*, 506 F.3d 1370, 1378-79 (Fed. Cir. 2007) (citation omitted). Whether material has been incorporated by reference is a question of law. *Id.* “The standard of one reasonably skilled in the art should be used to determine whether the host document describes the material to be incorporated by reference with sufficient particularity. *Id.*”

The ’108 patent fails to incorporate by reference the ’445 patent’s disclosure with sufficient particularity to one reasonably skilled in the art. The patentees demonstrated they were capable of exercising the required level of care in drafting an incorporation by reference statement when incorporating by reference a different patent, U.S. Patent No. 5,491,774: “***The present invention hereinafter incorporates by reference the materials disclosed in U.S. Pat. No. 5,491,774.***”² (Ex. 1, ’108 patent at 1:23-26.) No such statement is present for the ’445 patent.

This case is much like *Zenon*, in that the patentees “made clear what was being incorporated by reference and, ***by difference***, what was not.” *Zenon*, 506 F.3d at 1382 n.3. The patentees demonstrated they were capable of drafting a detailed and specific incorporation by reference statement, yet chose not to include one for the ’445 patent. In doing so, the patentees made clear that the ’445 patent’s disclosure was ***not*** incorporated by reference in the ’108 patent.

Importantly, e.Digital may not rely on a claim for priority to the ’445 patent as an incorporation by reference. A claim for priority is simply a claim for the benefit of an earlier filing date for subject matter that is common to two or more applications by maintaining “continuity of disclosure [] throughout a chain of patents.” *Id.* at 1378. It does not serve to incorporate the content of the priority document in the application in which the claim for priority is made. *Id.* Here, there is no such continuity. Indeed, the ’108 patent is a continuation-***in-part***, which is an admission that the ’108 and ’445 patent disclosures are different in scope.

² All emphases are added unless otherwise noted.

C. Claim 1 is indefinite without the benefit of the '445 patent's specification.

“Indefiniteness is a matter of claim construction, and the same principles that generally govern claim construction are applicable to determining whether allegedly indefinite claim language is subject to construction.” *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1319 (Fed. Cir. 2008). Indefiniteness, like claim construction, is a question of law. *Id.*

The Patent Act requires that the specification of every patent “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112, ¶ 2. The Supreme Court has stated that a patent’s claims are indefinite when, viewed in light of the specification and prosecution history, they fail to “inform those skilled in the art about the scope of the invention with **reasonable certainty**.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014).

Here, without the benefit of the '445 patent's specification, claim 1 is indefinite because it fails to inform those skilled in the art about the scope of the following claim terms with reasonable certainty: (1) “creating the primary memory from a non-volatile, long term storage medium, wherein the primary memory comprises a plurality of blocks in which the data segments are to be stored”; (2) “direct manipulation of contiguous and non-contiguous data segments”; (3) “file system”; (4) “cache memory”; (5) “a logical link between the previous logical data segment and the new data segment”; (6) “previous logical data segment”; and (7) “a path for sequentially accessing the data segments within the primary memory”.

As discussed in section II.A, above, the steps of claim 1 are not described in the '108 patent. Rather, these steps are only described in the '445 patent's specification. One having ordinary skill in the art cannot determine what is and is not covered by the steps of claim 1 because the '445 patent's specification was not properly incorporated by reference. As a result, claim 1 fails to “inform those

1 skilled in the art about the scope of the invention with reasonable certainty,” and is
 2 therefore invalid.³ *Nautilus*, 134 S. Ct. at 2129.

3 **D. The disclaimers in the ’445 patent file history apply to the ’108**
 4 **patent.**

5 Because the ’108 patent is a continuation-in-part of the ’445 patent, the ’445
 6 patent file history serves as intrinsic evidence to construe the claims of the ’108
 7 patent, even though not incorporated by reference. *See, e.g., Omega Eng’g, Inc., v.*
 8 *Raytek Corp.*, 334 F.3d 1314, 1333 (Fed. Cir. 2003) (“[A]n interpretation asserted
 9 in the prosecution of a parent application can also affect continuation applications,
 10 continuation-in-part applications, and even related continuation-in-part applications
 11 arising from the same parent.”). The claim terms in question here are found in the
 12 claims of the ’445 patent. With the exception of one limitation, each and every
 13 element recited in claim 1 of the ’108 patent is found in claim 1 of the ’445 patent.

14 Moreover, the patentees never evinced a desire to recapture any claim scope
 15 disclaimed in the ’445 patent. *See, e.g., Hakim v. Cannon Avent Grp., PLC*, 479
 16 F.3d 1313, 1317-18 (Fed. Cir. 2007) (“Although a disclaimer made during
 17 prosecution can be rescinded . . . the prosecution history must be sufficiently clear
 18 to inform the examiner that the previous disclaimer, and the prior art that it was
 19 made to avoid, may need to be re-visited.”). Thus, the patentee’s statements in the
 20 ’445 patent’s specification and prosecution history regarding claim scope carry
 21 forward to the ’108 patent with equal force. For instance, the ’108 patent’s
 22 specification endorses the disparagement of prior art found in the ’445 patent’s
 23 specification. (*See* Ex. 1, ’108 patent at 1:55-58; *see also id.* at 1:58-2:41 and
 24 Ex. 2, ’445 patent at 2:41-3:21, wherein the ’108 and ’445 patent specifications
 25 identify, word-for-word, the same shortcomings in the prior art.) Furthermore, the
 26 patentees made no statements to the examiner during prosecution stating that

27 ³ Failure to incorporate by reference the ’445 patent also renders the claims invalid
 28 for failing the written description and enablement requirements of 35 U.S.C.
 § 112. Verbatim intends to file a motion for summary judgment on these issues.

1 claim 1 at issue here should carry a broader, or otherwise different, scope than
2 claim 1 of the '445 patent. The '108 patent thus issued without an office action.
3 The patentees should be held to such statements in construing the claim in question
4 here, which includes each and every limitation from claim 1 of the '445 patent.

5 Notably, during prosecution of the '445 patent, the PTO rejected claim 1 of
6 that patent as obvious in view of U.S. Patent No. 5,586,291 and J. Esakov & T.
7 Weiss, *Data Structures – An Advanced Approach Using C* (1989). (Ex. 3, '445 File
8 History, July 1, 1997 Office Action at 3.) The patentees traversed the rejection,
9 arguing that the combination of cited references used a virtual memory map and
10 thus taught away from the alleged invention. (Ex. 4, '445 File History, November
11 10, 1997 Amendment.) The patentees explained that the alleged invention obviated
12 the need for a memory map and instead provided access to data through the use of a
13 linked list file structure. In particular, “[t]o increase efficiency, the **only way** [in the
14 alleged invention] to determine the location of data is to traverse the linked list of
15 data segments.” (*Id.* at 5.) The patentees also distinguished the alleged invention
16 from the cited prior art references and Ban because in the invention “data can be
17 manipulated directly in flash memory.” (*Id.* at 8.) The patentees further
18 distinguished the linked list of the alleged invention, which is a “linked list for file
19 structures,” from prior art linked lists for “data structures.” (*Id.* (“Jeffrey teaches
20 data structures. In contrast, the present invention teaches an operating system using
21 linked lists for file structures.”) (emphasis in original).) In other words, the
22 patentees made clear their linked list is used in the specific context of a file system,
23 and not for **any** data structure linkage. In response to these arguments, the claim
24 was allowed. (Ex. 5, '445 File History, January 5, 1998 Notice of Allowability.)
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III. Proposed Constructions for Disputed Terms⁴

A. The Preamble Is Limiting.

e.Digital's Proposed Construction	Verbatim's Proposed Construction
Preamble is not limiting	Preamble is limiting

The preamble of claim 1 of the '108 patent is limiting for a number of reasons. First, the patentees relied on terms in the preamble during prosecution to distinguish the claimed invention from the prior art. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (“[C]lear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation . . .”). During prosecution of the '445 patent, the patentees relied on the terms “file system,” “primary memory,” and the “direct manipulation . . . of data segments” from the preamble to distinguish prior art references cited by the examiner. The patentee first argued that the prior art references were inapplicable because they were directed to “data structures” and not specifically to “*file* structures”:

Jeffrey teaches data structures. In contrast, the present invention teaches an operating system using linked lists for file structures. The Office Action has seemingly failed to notice this distinction, and has failed to provide any motivation for treating file structures like data structures.

(Ex. 4, '445 File History, November 10, 1997 Amendment, at 8 (emphasis in original).) This distinction is captured by the preamble and particularly the preamble term “file system”—indeed, the term “file” only appears in claim 1 as part of the “file system” term.

The patentee also argued that the prior art did not explain how to use flash memory as primary memory, as does the invention of the '445 patent. (Ex. 4, '445

⁴ The following sections assume that the '108 patent satisfies the definiteness requirement of 35 U.S.C. § 112, despite not properly incorporating by reference the '445 patent. Additionally, it is noted that, while selected citations from the Intrinsic Support and Extrinsic Support from the Joint Claim Construction Chart are cited herein, any other citations that are listed in the Joint Claim Construction are expressly incorporated herein by reference.

1 File History, November 10, 1997 Amendment at 8 (“The combination of references
 2 falls far short of explaining how to deal with the difficulties of using flash memory
 3 as *primary memory*.”).) Similarly, the patentee argued that “[u]nlike Ban, the
 4 present invention teaches how data can be *manipulated directly* in flash memory
 5 without significant RAM resources, and without having to use a FAT.” (*Id.*) Thus,
 6 the patentees’ arguments to overcome prior art demonstrate their “use of the
 7 preamble to define . . . the claimed invention” as a method applicable to only file
 8 systems where data can be manipulated directly in primary memory, transforming
 9 the preamble into a claim limitation. *Catalina*, 289 F.3d at 808.⁵

10 Consistent with the file history, the ’445 patent’s specification makes clear
 11 that these aspects of the preamble differentiate the patent from the prior art:

12 The present invention *claims being able to manipulate data directly in*
 13 *flash memory because the flash file system of the present invention*
 14 *enables data to be read in a logical order regardless of how many*
 15 *segments the file is comprised of, and where these segments are*
 16 *saved in memory.*

17 (Ex. 2, ’445 patent at 5:55-6:3; *see also id.* at 7:62-8:4; 4:53-55.)

18 Second, the patentees repeatedly stress the importance of a “file system” that
 19 allows direct manipulation of data in primary memory to their alleged invention,
 20 further confirming that the preamble is limiting. *See Rotatable Techs. LLC v.*
 21 *Motorola Mobility LLC*, No. 2014-1042, 2014 WL 2898532, at *1 (Fed. Cir. June
 22 27, 2014) (“The specification is replete with references to [preamble term]
 23 ‘selectively rotating,’ underscoring the importance of the feature to the claimed
 24 invention.”). For instance, the specifications of the ’445 and ’108 patents highlight

25
 26 ⁵ In addition to relying on terms from the preamble to distinguish over prior art
 27 references during prosecution, the preamble forms the antecedent basis for the use
 28 of “primary memory” and “data segments” in the body of the claim. *Catalina*,
 289 F.3d at 808 (“[D]ependence on a particular disputed preamble phrase for
 antecedent basis may limit claim scope because it indicates a reliance on both the
 preamble and claim body to define the claimed invention.”).

the importance of the preamble by repeatedly characterizing it as central to the “object of the invention”:

Another object of the present invention *to provide a file system* for non-volatile, long-term storage media....

Another object of this invention *to provide a file system* which has particular application to the storage medium of flash memory.

Another object of the present invention *to provide a file system* which is significantly fault tolerant.

The present invention also includes a method of memory management for a *primary memory . . . which enables direct manipulation of data segments stored therein.*

These and other objects are realized in a method of memory management for a *primary memory . . . which enables direct manipulation of data segments therein.*

(Ex. 1, '108 patent at 3:34-4:9; *see also* Ex. 2, '445 patent at 3:33-59.)

In short, as repeatedly demonstrated during prosecution and in the '108 and '445 patent specifications, a “file system” that allows “direct manipulation” of data in “primary memory” “states the framework of the invention,” *On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1343 (Fed. Cir. 2006), and is thus limiting because it “give[s] life, meaning, and vitality” to the claims. *Catalina*, 289 F.3d at 808. Therefore, the Court should find the preamble of claim 1 limiting.

B. Disputed Terms from the Preamble

1. “primary memory”

e.Digital's Proposed Construction	Verbatim's Proposed Construction
“addressable storage to which a computer system's microprocessor has direct access”	“main memory of a computer system, i.e., the main general-purpose storage to which the microprocessor has direct access”

The parties propose similar constructions for the term “primary memory,” with the principal dispute being whether the “primary” memory must be the “main” memory of the computer system. Both parties agree that primary memory is

1 memory for which a computer system's processor has direct access. Consistent
2 with the term's plain meaning and its use in the intrinsic record, Verbatim's
3 construction further confirms that the primary memory is the main memory.
4 Plaintiff would improperly expand the definition of primary memory, as Plaintiff
5 must for infringement purposes, to *any* memory accessible by a computer's
6 microprocessor. This contradicts the intrinsic record, as well as the extrinsic
7 evidence plaintiff repeatedly relies on to support its claim construction positions.

8 "Primary memory" appears throughout the elements of Claim 1. It is
9 defined in the specification and claims as being "created from non-volatile, long-
10 term storage media." (Ex. 1, '108 patent Claim 1, col. 4:5-8.) An important goal of
11 the '108 patent was to use non-volatile, long-term storage media as a replacement
12 for RAM in a computer system. The '445 and '108 specifications both state this
13 objective. (*See, e.g.*, Ex. 2, '445 patent at col. 2:5-7 ("Therefore, it would be
14 advantageous to be able to replace RAM with a long-term storage medium.");
15 Ex. 1, '108 patent col 2:34-38 ("While the objective of making a system see flash
16 memory as RAM with its accompanying benefits of non-volatility is desirable, the
17 approach taken by Ban fails to take full advantage of flash memory by continuing
18 to rely heavily on RAM resources.").)

19 Both intrinsic and extrinsic evidence show that RAM, or primary memory, is
20 synonymous with main memory. The '108 patent incorporates by reference U.S.
21 Patent No. 5,491,774 (the "'774 patent"). (*Id.* at col. 1:22-25 ("The present
22 invention hereinafter incorporates by reference the materials disclosed in U.S. Pat.
23 No. 5,491,774.")) The disclosure of the '774 patent along with statements made
24 during prosecution of that patent clearly show that it equates "main memory" and
25 "RAM." (*See Ex. 6, e.Digital v. Pentax of Am.*, 9-cv-2578, ECF No. 395, Markman
26 Order at 13 (D. Colo. Jun. 28, 2011); Ex. 7, '774 File History, July 20, 1995, Resp.
27 to Office Action, at 8, 11.) Similarly, one of ordinary skill in the art in the mid-
28 1990s would understand "main memory" to mean RAM. (*See Ex. 8, Microsoft*

1 Press Computer Dictionary (2d ed. 1994) (defining “main memory” as “RAM” or
 2 “primary memory”). As a result, the goal of the ’108 patent is to use the claimed
 3 “primary memory” as the main memory of a computer system in order to abandon
 4 reliance on RAM.

5 That primary memory cannot be any addressable storage accessible by the
 6 computers’ microprocessor (as proposed by plaintiff) is confirmed in the ’445
 7 patent’s prosecution history. In distinguishing the prior art, the patentees made
 8 clear that *cache* memory (which is not the main memory in the system, but
 9 nevertheless accessible by a computer microprocessor) is not primary memory:

10 The combination of prior art references results in a non-volatile cache
 11 (*non-primary*) memory which has a virtual memory map describing
 linked lists.

12 . . .

13 Furthermore, Lasker only teaches using non-volatile memory as cache
 14 memory, *when cache memory does not have to deal with the
 substantially more difficult issues of primary memory* as explained in
 the present invention.

15 (Ex. 4, ’445 File History, November 10, 1997 Amendment at 5, 7.)

16 But plaintiff’s construction would improperly expand the definition of
 17 primary memory to capture a cache memory, which is directly contradicted by the
 18 intrinsic record. Verbatim, therefore, respectfully requests that the Court reject
 19 e.Digital’s construction and adopt Verbatim’s interpretation of “primary memory.”

20 2. “file system”

e.Digital’s Proposed Construction	Verbatim’s Proposed Construction
plain and ordinary meaning	“system to organize and keep track of files without using file allocation tables (memory maps)”

24 A “file system” is a term commonly used in the art and generally means a
 25 “system [] to organize and keep track of files.” (Ex. 9, Random House Personal
 26 Computer Dictionary (2d ed. 1996) (defining “file system” as a “system that an
 27 operating system or program uses to organize and keep track of files.”) But in the
 28 ’108 and ’445 patents, the patentees made clear they were disclosing a “file system”

1 that is different than the prior art by both defining it in the '445 patent's
2 specification and clarifying this definition in statements made during prosecution.

3 Consistent with Verbatim's proposed construction, the patentees
4 unambiguously made clear that the file system of the present invention does not use
5 memory maps or file allocation tables (FAT):

6 It is yet another object to provide a file system which further reduces
7 RAM requirements *by replacing a memory map with logically linked
serial data segments.*

8 . . .
9 Still another object is to provide a *file system which uses absolute
10 physical memory addresses to avoid the additional overhead created
by memory mapping.*

11 (Ex. 2, '445 patent at 3:47-49, 3:57-59)

12 Indeed, to illustrate the benefits of avoiding memory maps, the '445 patent's
13 specification repeatedly disparages the teachings of the prior art reference U.S.
14 Patent No. 5,404,485 ("Ban"), which used memory maps:

15 **The key feature to recognize is that Ban's method requires**
16 ***indirection through virtual mapping to compensate for the frequent***
17 ***movements of data.*** The technique apparently enables flash memory to
18 imitate the look of RAM, but at the crippling overhead cost of
significant data movement when any modification is made.

19 . . .
20 The objectives of the Ban patent are highly desirable, but
21 implementation *using the technique of virtual mapping leaves any
system using the Ban method not only vulnerable to significant data
loss*, but tied to a method which inherently cripples itself with
overhead requirements.

22 . . .

23 The present invention takes a very different approach to memory
24 management. . . . [It] overcomes the significant drawbacks of Ban.

25 (*Id.* at 7:20-25, 51-55, 62-65; *see also* Ex. 1, '108 patent at 1:55-2:32
26 (distinguishing Ban for the same reasons).)

27 Furthermore, during prosecution of the '445 patent, the patentees confirmed
28 to the Patent Office that their invention does not use a FAT (memory map):

The present invention enables the ***elimination of a FAT (memory map)*** . . . [T]he only way to determine the location of data is to traverse the linked list of data segments.

...
The FAT as described in Jeffrey is the same FAT (or virtual memory map) described in Ban . . . ***which the present invention has taken great pains from which to distinguish itself.***

...
Unlike Ban, the present invention teaches how data can be manipulated directly . . . ***without having to use a FAT.***

(Ex. 4, '445 File History, November 10, 1997 Amendment at 5-6, 8.) Because the patentees made clear that their “file system” does not use file allocation tables (memory maps), Verbatim’s proposed construction of “file system,” a “system to organize and keep track of files without using file allocation tables (memory maps),” should be adopted. *Biogen Idec, Inc. v. GlaxoSmithKline LLC*, 713 F.3d 1090, 1095 (Fed. Cir. 2013) (“[W]hen the patentee unequivocally and unambiguously disavows a certain meaning to obtain a patent, the doctrine of prosecution history disclaimer narrows the meaning of the claim consistent with the scope of the claim surrendered.”).

3. “direct manipulation of contiguous and non-contiguous discrete data segments”

e.Digital’s Proposed Construction	Verbatim’s Proposed Construction
plain and ordinary meaning	“manipulation of contiguous and noncontiguous data segments directly in the primary memory through changes to data segment headers without using a file allocation table.”

The '445 patent specification makes clear that it is an object of the invention to provide manipulation of data segments directly in the primary memory:

These and other objects are realized in a method of memory management for a primary memory . . . , ***which enables direct manipulation of data stored therein.***

(Ex. 2, '445 patent at 3:60-64; *see also* 5:65-6:3, 6:45-50, 7:6-25.) Moreover, “[a]ll modifications take place ***as changes to data segment headers only.***” (*Id.* at

6:47-48.) Thus, Verbatim's proposed construction should be adopted because it is consistent with the patentee's description of what direct manipulation is.

Additionally, as described in more detail above with respect to the term "file system," the patentees unambiguously made clear that the alleged invention does not use memory maps or file allocation tables (FAT) by disparaging the use of these technologies in the prior art. These statements may reasonably be viewed as a disavowal of claim scope. *See Chicago Bd. Options, LLC*, 677 F.3d at 1372.

C. Terms from Step (a) of Claim 1: Creating the Primary Memory

1. "creating the primary memory from a non-volatile, long term storage medium, wherein the primary memory comprises a plurality of blocks in which the data segments are to be stored" / "creating"

e.Digital's Proposed Construction	Verbatim's Proposed Construction
"causing a portion or portions of a non-volatile long term storage medium, comprised of a plurality of blocks in which the data segments are to be stored, to perform at least one of a host's primary memory functions"	"dividing the non-volatile, long-term memory into equal size blocks, each block being the smallest amount of data that can be read from or written to the memory in a single read or write operation"
"creating" – plain and ordinary meaning	"creating" means "making or producing"

A disputed claim term cannot be viewed in a vacuum, but rather must be interpreted in the context of the entire patent, including the specification. *Phillips*, 415 F.3d at 1313. Here, the intrinsic record makes clear that creating the primary memory comprises "dividing the primary memory into equal size blocks, each block being the smallest amount of data which can be read from or written to memory in a single read or write operation." (Ex. 2, '445 patent at 4:19-23.) This forms the basis for Verbatim's proposed construction, with the only difference being that Verbatim proposes replacing "primary memory" with "non-volatile, long-term memory," because the claim itself states that primary memory is created from a "non-volatile, long-term storage medium." (Ex. 1, '108 patent, Claim 1.) Verbatim further clarifies that, consistent with how one of ordinary skill in the art

would understand the term, “creating” means “making or producing.” (*See* Ex. 10, The Grosset Webster Dictionary (1970 ed.) (defining “create” as “to produce”).)

e.Digital’s proposed construction cannot be correct because it finds no basis in the claim language or in the specification. *Phillips*, 415 F.3d at 1314.

e.Digital’s proposed construction has nothing to do with creating a primary memory, but instead relates to causing portions of a memory to perform “a host’s primary memory functions.” Creating a memory and causing portions of that memory to perform functions are clearly two different steps. e.Digital seeks to redefine this limitation with phrases found nowhere in the specifications of the ’445 or ’108 patents. e.Digital’s proposed construction thus runs afoul of the principle that claim construction must be grounded in evidence intrinsic to the patent in order to “stay true” to what the inventor actually invented. *Renishaw*, 158 F.3d at 1250.

For these reasons, Verbatim respectfully requests that the Court adopt its proposed construction of the “creating” limitation.

D. Terms from Step (b) of Claim 1: Coupling the Cache Memory to the Primary Memory

1. “coupling a cache memory to the primary memory, said cache memory providing temporary and volatile storage for at least one of the data segments”

e.Digital’s Proposed Construction	Verbatim’s Proposed Construction
plain and ordinary meaning	“creating a removable, interchangeable electrical connection between the cache memory and the primary memory”

The ’108 patent discloses not just a coupling between the primary memory and the cache memory, but a specific coupling that is both removable and interchangeable. Repeatedly, the ’108 patent explains that the flash memory used in the alleged invention is removable and interchangeable:

These and other objects are realized in a CD quality record/playback device for use with a **removable, interchangeable, flash memory recording medium** which enables extended recording of 30 minutes or more.

(Ex. 1, ’108 patent, 3:42-47 ; *see also id.* at 5:14-23; 8:44-51.)

1 Similarly, flash memory described in the '774 patent, which is incorporated
2 by reference by the '108 patent,⁶ and its prosecution history describe flash memory
3 as removable and interchangeable:

4 An electronic interconnect means 28 is electrically coupled to the
5 memory circuitry 24 and is ***configured for removable, electrical***
6 ***coupling with a flash memory module*** 29 capable of retaining
recorded digital information for storage in nonvolatile form.

7 (Ex. 11, '774 patent, 4:14-18; *see also id.* at 4:59-63.)

8 Because the patentee consistently described the flash memory as having a
9 removable and interchangeable coupling in the abstract, specification, and claims,
10 the term should be construed in light of these disclosures. *See Edwards*
11 *Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1327-31 (Fed. Cir. 2009) (limiting
12 the claim term “graft” to mean “intraluminal graft” when “the only devices”
13 disclosed in the specification were intraluminal).

14 2. “cache memory”

15 e.Digital's Proposed Construction	Verbatim's Proposed Construction
16 plain and ordinary meaning	“memory strictly used to temporarily store a block of read/write data”

17 Verbatim's proposed construction comports with the '445 patent's
18 specification, which states that “***this invention*** strictly uses a cache memory . . . to
19 temporarily store a block of read/write data.” (Ex. 2, '445 patent at 8:25-26.) *See*
20 *Honeywell*, 452 F.3d at 1318 (concluding invention was limited to fuel filter
21 because specification referred to fuel filter as “this invention” and “the present
22 invention”). The '445 patent's specification explains why using the cache memory
23 strictly for this purpose is important. In the prior art, RAM size had to “grow
24 accordingly relative to the size of the flash memory provided by the system,”
25 because the prior art used a memory map to store the location of data segments in
26 memory. (Ex. 2, '445 patent at 8:18-26; *see id.* 7:18-67.) Because the memory

27 ⁶ Materials cited in a patent constitute intrinsic evidence. *Kumar v. Ovonic Battery*
28 *Co.*, 351 F.3d 1364, 1368 (Fed. Cir. 2003).

map was stored in RAM, the size of the RAM had to increase as the size of the primary memory increased.

In contrast, the alleged invention eliminates the use of memory maps and instead uses logical links stored in the headers to provide “a logical path to the data segments.” (*Id.* at 6:18.) The only way to determine the location of data in the alleged invention of the ’445 patent is to traverse the linked list of data segments, one segment at a time. (Ex. 4, ’445 File History, November 10, 1997 Amendment at 6.) As a result, the alleged invention of the ’445 patent implements a cache memory “only as large as a single read/write block of data,” (*id.* at 8:12-15), and the patentees made this clear by repeatedly disparaging larger size caches used in the prior art. *See Chicago Bd. Options*, 677 F.3d at 1372 (“[R]epeated derogatory statements about [a particular embodiment] reasonably may be viewed as a disavowal of that subject matter from the scope of the [p]atent’s claims.”).

Verbatim’s proposed construction is consistent with the meaning of “cache memory” in view of the specification. Verbatim therefore respectfully requests that the Court construe “cache memory” to mean “memory strictly used to temporarily store a block of read/write data.”

E. Terms from Step (c) of Claim 1: Linking a New Data Segment to a Previous Data Segment

1. “previous logical data segment”

e.Digital’s Proposed Construction of “logical data segment”⁷	Verbatim’s Proposed Construction
“logically related data segment”	“data segment with a header that stores the physical location of the next logical data segment.”

⁷ Verbatim contends that this term is improperly truncated and to the extent a phrase needs to be construed, it should be the claim term “*previous* logical data segment.” The disputed term appears twice in claim 1 of the ’108 patent. Both times, the claim refers to “the *previous* logical data segment,” not just the “logical data segment.” This is because the word “previous” is necessary to provide the context in which the term is used.

Claim 1 refers to linking two data segments, a new data segment and a “previous” data segment. This linking forms a linked list where data segments are “retrievable in a seemingly contiguous order.” (Ex. 2, ’445 patent at 5:8-9.) Data segments would not appear to be retrievable in a seemingly contiguous order if the new data segment was not linked to the “previous” logical data segment.

Similarly, Verbatim’s proposed construction for the term is consistent with the used of linked lists disclosed by the ’445 patent. The ’445 patent discloses that when a data segment is written, “a header is placed at the beginning of the segment. The header indicates which logically related data segment precedes the new data segment. The header also indicates *the location of the next logically related and subsequent data segment.*” (*Id.* at 4:27-31.) The location of the next logically related data segment is “an absolute physical address in primary memory.” (*Id.* at 4:38-39.) Headers are required in order for the alleged invention to function. (*Id.* at 6:3-8.) Thus, a logical data segment is a “data segment with a header that stores the physical location of the next logical data segment.”

e.Digital’s proposed construction ignores the importance of the header included in each data segment. During prosecution, the applicant explained that “the only way to determine the location of data is to traverse the linked list of data segments.” (Ex. 4, ’445 File History, November 10, 1997 Amendment at 6.) Without the header indicating the location of the next logically related data segment, the linked list would fail. Thus, e.Digital’s construction cannot be correct.

2. “a logical link between the previous logical data segment and the new data segment”

e.Digital’s Proposed Construction	Verbatim’s Proposed Construction
“logically related data segment”	“a pointer written to the previous logical data segment that points to the physical location of the new data segment”

Verbatim’s proposed construction is consistent with the plain and ordinary meaning of the phrase to one of ordinary skill in the art in view of the

1 specification,⁸ and is supported by the intrinsic record.

2 The '445 patent's specification supports this construction. For example, it
 3 equates a "logical link" to a pointer to the physical location of a data segment by
 4 stating that "a path for sequentially accessing the data segments"—which,
 5 according to Claim 1, is provided by "logical link[s]" between data segments—is
 6 provided by "*pointers to absolute physical locations within flash memory.*"
 7 (Ex. 2, '445 patent at 6:17-18.) The '445 patent's specification further discloses
 8 that the claimed invention requires the use of pointers to the physical location of
 9 data segments to provide logical linkage:

10 [I]mplementation of the flash file system *requires* that each data
 11 segment have written to it a header. Within the header in
 12 predetermined fields, *absolute physical addresses are saved*. These
 13 addresses are *physical locations within flash memory of the next*
 14 *logical data segment*.

15 [T]he headers of the present invention are written so as to contain
 16 *pointers which point to files* which a user deems to be logically related
 17 to by subject.

18 (*Id.* at 6:3-8, 17:49-51.) The patentees also made clear that in a write operation
 19 (*i.e.*, writing a data segment to non-volatile memory), a logical link pointing to the
 20 subsequent data segment is created:

21 In a write operation of a new data segment, a header is placed at the
 22 beginning of the segment. . . . *The header also indicates the location*
 23 *of the next logically related and subsequent data segment.*

24 (*Id.* at 4:27-31.)

25 Importantly, neither the '445 patent nor the '108 patent discloses any
 26 mechanism for providing a logical link between two data segments other than
 27 through a pointer to the physical location from one of the data segments to the other
 28 (*i.e.*, a linked list of data segments). Indeed, the patentees explicitly stated in the

⁸ Pointers were well-known in the art in the mid-1990s as variables containing memory locations or addresses. (*See, e.g.*, Ex. 8 ("pointer. . . [A] variable that contains the memory location (address) of some data . . .").)

1 '445 patent file history that “the *only way* to determine the location of data is to
 2 traverse the linked list of data segments.” (Ex. 4, '445 File History, November 10,
 3 1997 Amendment at 5.) Thus, Verbatim’s proposed construction is correct.

4 **3. “a path for sequentially accessing the data segments within
 5 the primary memory”**

e.Digital’s Proposed Construction	Verbatim’s Proposed Construction
“logically related data segment”	“a linked list used instead of a file allocation table (memory map) for sequentially accessing data segments within the primary memory”

9 As has been described before, throughout the intrinsic record, the patentees
 10 made clear that a linked list of data segments is used *instead of* a FAT (memory
 11 map) and indeed enables the *elimination* of a FAT. *See supra* part III.B.2. The
 12 patentees thus explained that “logically linked serial data segments” *replace* a
 13 memory map, (Ex. 2, '445 patent at 3:47-49), and that the linked list of data
 14 segments is the “*only way* to determine the location of data” (Ex. 4, '445 File
 15 History, November 10, 1997 Amendment at 5). Because the linked list is the
 16 “only” way to determine the location of data, it is clearly used instead of a FAT
 17 (memory map).

18 Furthermore, in computer science and engineering, elements, such as data
 19 segments, that are linked together are called a linked list. (*See* Ex. 12, Dictionary of
 20 Computing (4th ed.) (“linked list (chained list) A list representation in which items
 21 are not necessarily sequential in storage. Access is made possible by the use in
 22 every item of a link that contains the address of the next item in the list.”); *see also*
 23 Ex. 8, Microsoft Press Computer Dictionary (2nd ed.) (“linked list In
 24 programming, a list of nodes or elements of a data structure connected by
 25 pointers.”).) Indeed, this is how the patentees referred to the path of data segments
 26 in the '445 patent file history:

27 To increase efficiency, the only way to determine the location of data
 28 is to traverse *the linked list of data segments*. *The linked list not only*

tells where the related data segments are located for one file, but it also links the first data segment of all files together.

...

The first file contains an address not only of the next logical data segment, but to the address of the first logical data segment of the second file. Accordingly, *the linked lists not only preserve continuity of discontinuous but logically related data segments, they also preserve continuity to previous and subsequent but unrelated files having their own discontinuous but logically related data segments.*

(Ex. 4, '445 File History, November 10, 1997 Amendment at 5-6, 9.) In other words, the patentees explicitly describe the logically connected data segments as a "linked list" of segments. Thus, consistent with the plain meaning and the intrinsic record, the path for sequentially accessing the data segments is a linked list.

In light of the above, Verbatim respectfully requests that "a path for sequentially accessing the data segments within the primary memory" be construed as "a linked list used instead of a file allocation table (memory map) for sequentially accessing data segments within the primary memory."

4. "industry standard data storage format"

e.Digital's Proposed Construction	Verbatim's Proposed Construction
"industry standard file system"	"format in which data is stored that conforms to an industry standard"

Verbatim's proposed construction is consistent with the plain and ordinary meaning of the phrase to one of ordinary skill in the art in view of the '108 patent's specification. By way of example, the '108 patent discusses industry standard formats for recording or storing data in flash memory. (*See, e.g.*, Ex. 1, '108 patent at Abstract ("a flash memory module which can record data according to industry standard formats"); *id.* at 3:19-21 ("Another object is to enable the flash memory to store data so as to appear readable to industry standard information storage and retrieval operating interfaces and operating systems.").) The disclosure specifically points to MPEG-2, an industry standard format for storing audio and/or video information. (*Id.* at 10:53-56 ("The compression algorithm implemented in the present invention can vary as necessary and as technology changes. However,

1 industry standards such as MPEG-2 can presently be utilized.”.) Thus, the proper
2 construction for this term, in light of the specification, is “format in which data is
3 stored that conforms to an industry standard.”⁹

4 **V. Conclusion**

5 For the reasons discussed above, Verbatim respectfully requests that the
6 Court adopt each of the Verbatim’s proposed constructions.

7
8 Dated: November 17, 2014 **BARNES & THORNBURG LLP**

9
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25 ⁹ e.Digital contends that the shorter term “data storage format” should be construed.
26 “Data storage format,” however, is just a part of the “industry standard data
27 storage format” term for which Verbatim proposes a construction above. As such,
28 Verbatim contends no construction is necessary for just “data storage format.”
Should the Court, however, find it appropriate to construe the term, Verbatim
proposes that the term should be given its plain and ordinary meaning of “file
format in which data is stored.” (Oct. 6, 2014 Joint Claim Construction
Statement, App. A, ECF No. 36 at 35-37.)

PROOF OF SERVICE

I am a citizen of the United States and employed in Los Angeles County, California. I am over the age of eighteen years and not a party to the within-entitled action. My business address is 2029 Century Park East, Suite 300, Los Angeles, California 90067. On November 17, 2014, I served a copy of the foregoing document(s):

Defendant Verbatim Americas LLC's Opening Claim Construction Brief



By CM/ECF: I caused the documents to be electronically filed with the Clerk of the Court through the CM/ECF System, and that CM/ECF System will send notice of electronic filing to the parties noted on the attached Electronic Mail Notice List.

I declare that I am employed in the office of a member of the bar of this court at whose direction the service was made.

Executed on November 17, 2014, at Los Angeles, California.



David B. Kirvan

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